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EDITORIAL



THE VINDICATION OF "JOHN GILPIN"

"John Gilpin was a citizen
Of credit and renown,
A well known, radio "Ham" was he
Of many a flood bound town."

(With apologies to Cowper.)

When Nature in her anger gathers the elements in her hands and hurls them at some unsuspecting locality, the unfortunate victims quickly find that normal and regular routine is suddenly swept away. The superficial conditions of men are reduced to a Common Denominator. The inhabitants of a disaster area learn that they now have to depend on the fellowship, the understanding, and intelligence of their immediate companions; the people who live round the corner or across the paddock. No longer do politics, personalities, and outlooks become important. No longer do files of paper, licences, permits, and controls add up to anything meaningful. All that is important is fellow man and his ability to play his part.

Some few weeks ago, when the flood menace struck at Northern New South Wales, the citizens found that they were in the midst of just such an experience. Where once, by lifting a telephone or pressing a switch, they could demand service, they found none, and authority was powerless to supply any. They were forced to consider the situation; to find among themselves, someone who had the ability and the initiative to supply their wants, to relieve them of their distress. That person was not hard to find.

In his humble shack, surmounted by towering poles, "John Gilpin" (previously rather suspect because of his "queer" habits of talking to others of his kind over the air) had

notified the relief co-ordinator and was hard at work providing just that service the people lacked. Communications with the outside world were again established, the momentary needs were stated and help was assured.

Quickly the dejected realised that here indeed was one, who, in his own modest way, had trained himself to be of service to the community when the need arose. He hadn't announced his plans with high-pressure news releases, or long lists of detailed estimates. He hadn't declared this policy with acclamation, or decided that with contempt. He had quietly prepared knowing that, when the day of his testing arrived, he would not be found wanting. Those to whom he gave assistance will vouch for this and for his devotion to the cause of humanity.

Radio Amateurs throughout Australia, nay throughout the world, can be justly proud of the feats of that gallant band of enthusiasts who, using their own call signs, made their voices heard when all else was silent. "John Gilpin," the individual, had triumphed when all else had failed. He had proved that he could surmount all difficulties—that man was greater than the machine.

GENTLEMEN, you who did so much to raise the name of "Radio Amateur" to a zenith previously unattained, we salute you. May your sterling efforts be rewarded in a manner befitting your endeavour.

FEDERAL EXECUTIVE.

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THE "SKELETON SLOT" ANTENNA

BY G. M. BOWEN,* VK5XU

There has been quite a deal of interest in the slot as an antenna since the technical details of the Sutton-Coldfield t.v. station were released in "Wireless World." As the original slot antenna had a very high wind resistance with its solid surround, it was only natural that the Amateurs who could see the makings of a good v.h.f. radiator in it, would set to work to see how much of the surrounding metal could be cut away without seriously affecting its performance.

G2MC, in the August issue of "W.W.," gave the details of a "skeleton" for the 144 Mc. band and in order to have something different to talk about at a lecture, I made up a model in about half-an-hour which provided us all with a night's entertainment. The construction is very simple and the accompanying diagrams should be sufficient guide; the diameters are not critical.

The antenna radiates as a broadside array with a polar diagram like two half wave dipoles spaced half wave apart and fed in phase. The resultant figure of eight pattern is elongated and results in an approximate gain of 4 db over a single dipole.

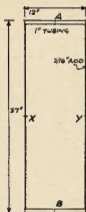


Fig. 1.

Maximum radiation takes place from the two short ends made from large diameter tubing as it is here that maximum current appears and that it does, can be proved by testing for horizontal or vertical polarisation with a simple dipole field strength meter. The dipole gives maximum reading when it is parallel to the two pieces of tubing, so that when they are horizontal the radiated wave is horizontally polarised.

Referring to Fig. 1, X and Y are high voltage, high impedance points, but as yet there is no data as to the exact value for the "skeleton." A and B are points of maximum current and therefore low impedance points which can be earthed if so required.

Since our article on "Skeleton Slots" in February, 1954, issue of "Amateur Radio," we have received further articles by VK5XU and VK2NO describing further experiments and results obtained with them.

To complete the picture we are publishing both articles to give readers additional food for thought and to satisfy the urge to try something new.

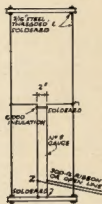


Fig. 2.

A quarter wave open line shown in Fig. 2 can be used as an impedance transformer and any line can be matched into the antenna. I found that 300 ohm ribbon matched in about one-third of the way up from B.

Fig. 3 shows an arrangement of feeding an unbalanced co-axial line into the two high impedance points X and Y. Some fanning out of the open line connections to the co-axial quarter wave



Fig. 3.

may be found necessary as the quarter wavelength of co-axial matching section will only need to be about 60% of $19''$ according to the velocity factor of the co-axial cable chosen.

Fig. 4 shows the quarter wave open wire stub affixed at right angles to the plane of the antenna. With this construction it is possible to add a reflector at the point where the stub is shorted. Its length will be an electrical half wave which will be approximately 38 inches.

When experimenting with reflectors and directors, I found that the use of reflectors gave the better results; better still, a reflector spaced 0.15 wavelength behind each 12 inch section of the antenna. In this case the reflectors were 5% longer than the length of an ordinary dipole (i.e. about 39 to 40 inches). The closer spacing reduced the radiation resistance and a re-adjustment of the feeder input was necessary to obtain correct matching.

By adjusting the distance between the two reflectors, the depth of the radiated beam can be altered, but as yet I have not made any quantitative tests to ascertain what gain could be expected. This particular aspect should be worth experimenting with, especially if readings can be obtained over some considerable distance.

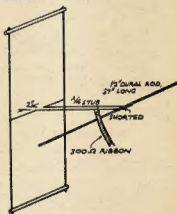


Fig. 4.

The single reflector raises the forward gain another 3 db and increases the front-to-back ratio as is usual; while there is quite a considerable improvement with the two, but how much I cannot yet say.

Fig. 5 should be self explanatory. Points A, B, C and D are at earth potential and therefore can be bonded together with the supporting mast passing through B and D, thus enabling the constructor to make a thoroughly rigid job which can be easily rotated. A third reflector could then be mounted a quarter wave length behind the feed points X and Y. The method for feeding the array, then, would be preferably as in Fig. 4.

* 73 Portrush Road, Toorak Gardens, S.A.

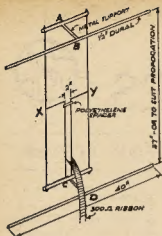


Fig. 5.

Spacing of Reflectors approx. 15 inches.

If a combination of any unlike metals is used in constructing the array, it is wise to give the finished array a fairly heavy coating of aluminium based enamel to stop corrosion of the joints in the damp weather. Make sure, too, that all joints are soldered if steel and brass are used, particularly where the long side pieces enter the larger diameter tubing. This will keep the ohmic losses down.

Having Fun With "Skeleton Slots"

BY DON B. KNOCK,† VK2NO

Although until now practically unheeded by VKs, something new and intriguing has hit the headlines (overseas) in the way of antennae. The "skeletonised" version of the aircraft type "slot" antenna, first appears to have originated in U.K., although passing reference has been made to it in "QST" (U.S.A.).

It remained for G2MC to evolve a practical version for 2 metres, with a full description in August, 1954, "Wireless World." I wish to draw attention also to a very informative article on the subject in "R.S.G.B. Bulletin" for January, 1953, dealing with the stacking, for v.h.f. work, of "Skeleton Slots." (An article on this subject was published in "A.R." of February, 1954, p.2—Ed.)

Co-incidental with a return to Amateur v.h.f. activity after an enforced absence of six years at VK2NO, some QRP 144 Mc. gear was put together, and a start made with a plain dipole. With a transmitter boasting all of 2 watts on the 676 p.p. triode p.a., excellent contact was established with most Sydney stations. One or two, however, remained "hard to get" from my coast-wise "edge of beyond" location.

In the search for better signal strength, the dipole grew a reflector,

became rotatable, and things began to look up. Then I thought of the skeleton slot and got busy.

Two such slots for 144 Mc. were made up, fed in phase, with one above the other, and backed by reflectors. The immediate results border on the fantastic, most of the v.h.f. gang around Sydney being sceptical about the 2 watts producing such a "mighty" signal.

There is no fuss about tuning up this array—for it is broadly resonant. The field strength indicator, a 0-1 Ma. meter with a 1N54 diode and small dipole, shows a high degree of forward gain, several feet in front of the array. Tests made with reliable observers up to 60 miles distant indicate a back-to-front ratio of 7 S points, which is around 30 db, and a very good discrimination off the ends of the array.

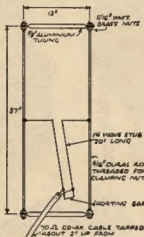


Fig. 6.—Skeleton Slot for 144 Mc.

The sketch (Fig. 6) shows the structure of the skeleton slot for 144 Mc., cut to hit around 144.6 Mc. Two 37 inch lengths of 5/16 inch rod, dural in my case, are threaded at the ends for hex. nuts. Two 14 inch lengths of tubing are flattened at the ends and drilled for 5/16 inch clearance at 13 inch centres. Clamped in position by the nuts, the assembly becomes rigid and virtually self-supporting. The centres of the 14 inch tubes at top and bottom are "cold" for r.f. and therefore no insulation is necessary for mounting on a pole or any structure.

Now comes the really important point about the skeleton as distinct from the metal surround slot—although a physically vertical arrangement, it radiates horizontally polarised waves, a decided advantage with interesting possibilities for lower frequencies. The feed points at the centres of the 37 inch upright rods approximate 600 ohms, so that if desired an open line may be applied, or a quarter wave stub with shorting bar for 70 or 300 ohm line. G2MC found that the stub can be brought down vertically and terminated on the bottom cross tube member. Alternatively, the stub can be arranged hori-

zontally on a strut from the supporting pole, and a 40 inch reflector placed as combined shorting bar and reflector.

Fig. 7 shows how the two skeleton slots are arranged at VK2NO. A length of 1 1/2 x 1 inch timber 10 feet long is used as the foundation, with three struts 20 inches long. Two of the struts are at positions from the centres of the slots, to hold the respective reflectors, and the centre one is for the junction of the feedlines.

From the centres of the 37 inch rods, 34 inch lengths of 16 gauge wire are arranged, being brought together on 2 inch polystyrene spacers to form a uniform feedline. These lines, from each slot, are paralleled and thus the effective impedance is 300 ohms, the feedline from the array being Telcon 300 ohm ribbon.

It will be appreciated that with these two slots phased and paralleled (make sure you don't transpose the lines), no matching stub is necessary. If you wish to use low impedance line, that is simple too. Just make the paralleled lines from the slots 50 inches long each, instead of 34 inches (as for 300 ohms), join on the 70 ohm co-ax or ribbon, and away you go.

The results obtained with this little array are so promising that the writer is harbouring slot ideas for other bands. For instance, a skeleton slot 9 ft. 6 in. by 3 ft. 3 in. should be interesting on 6 metres; remember—horizontal radiation with a vertical array! What about one 22 ft. by 7 ft. for 21 Mc., hanging vertically from that unused pole! You can pull it around with two ropes for directivity!



Fig. 7.—Side View.

There are other considerations, too, subject also to trial and result. It may be possible to use a 6 metre skeleton slot inside a 15 metre one, and rotate the two together! When on 6 metres the larger metal rectangle might contribute somewhat to the normal slot "surround." My reason for telling this yarn about the skeleton slot is mainly because of its convenience in construction. It is not claimed that there are any magical qualities, but it most certainly is a fine performer on 2 metres.

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BY F. G. BAIL,* VK3YS

THE tube used for the r.f. amplifier is a twin-triode 6J6 push pull connected, this circuit (Fig. 1a) providing about the highest gain, commensurate with a good signal to noise ratio, that is attainable in one r.f. stage. Noise due to random electron flow within a tube is at a minimum with triodes, a factor which is of practical use in receivers on v.h.f.s. The p.p. arrangement reduces the loading on the input circuit, enabling a relatively large grid inductance to be used, so that a good step-up ratio from antenna coil to grid coil is obtained. This, of course, gives a substantial voltage gain ahead of the grids.

The 6J6, with its common cathode, is particularly suited to this application; there being no flow of r.f. current to earth at this point in a p.p. Class A circuit, the effects of cathode lead inductance are eliminated. There are no difficulties, of course, in obtaining 6J6s or their English equivalent, the ECC91.

The tube requires neutralisation, and this is achieved with small disc condensers as described later.

CONSTRUCTIONAL DETAILS

An earthed plate (Fig. 2) across the tube socket provides shielding between the grid and plate circuits. Brass shim 0.004" thick was used, although clean tinplate should suit the purpose equally well. The holes H.H. serve to bring through the insulated plate leads to the neutralising condensers. It fits snugly across the tube socket between pins 3 and 4 and pins 7 and 1. Pin 3 (the earthed heater pin) is soldered onto the shield, as is also the centre screening pin of the socket.

A solder lug, pointing away from the socket, on each of the bolts fastening the socket to the chassis, provides further support when bent up parallel with and soldered to the shield. If the ends of this shield are turned back at right angles, for say $\frac{1}{4}$ " to form flanges, rigidity is assured.

* 60 Shannon Street, Box Hill, E.12, Victoria.

Here is a description of a high gain low noise r.f. amplifier stage for the 144-148 Mc. band. It can be added to an existing receiver or fed straight into a mixer-oscillator circuit to make up a two tube, high performance converter, along the lines of a the suggested arrangement shown.

A Teletron ST57L/2 (shielded) socket was used, and the mounting saddle in this series is so orientated with respect to the pin connections as to suit the above arrangement.



Fig. 2.—Shield for p.p. 6J6 stage, showing extent to allow fitting over the socket and its associated fixing bolts.

NEUTRALISING CONDENSERS

A single way resistor strip (Fig. 3), having four free lugs between the mounting lugs, was used as a support for the screw adjustment of the neutralising condensers (as well as for the grid coil). It will be seen that lugs 1 and 4, which should be tapped with a $\frac{1}{4}$ " screw thread through their rivet holes, each have a brass nut soldered onto them at this position to carry the neutralising condenser screws. The tapping of the rivet holes alone did not give sufficient rigidity to these adjusting screws, but with the addition of the nuts this problem was overcome.

After the tapping has been done, insert the adjusting screws ($\frac{1}{4}$ " x $\frac{1}{8}$ " brass machine screws) with the nuts run on about half way, then slightly tighten the nuts—lock nut fashion—onto the lugs. Check to see that the screws turn easily but without wobble, holding the nut against turning with fingers or pliers, and then solder the nuts to the lugs.

To the tail end of each screw solder a disc, $\frac{1}{8}$ " diameter, of thin brass or copper. Similar discs are soldered to the ends of the plate wires which are brought through the shield for this purpose. For maximum rigidity these wires can be supported on tiny standoff insulators, or a resistor strip, located between the tube socket and the grid coil mounting strip. Two $\frac{1}{8}$ " holes were drilled through the end of the chassis to permit adjustment of the neutralising condensers.

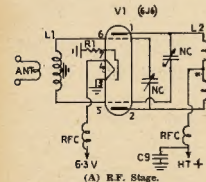
COILS

Wire size number 20 a.w.g. enamelled. The grid coil (L1) consists of eight turns, centre tapped, $\frac{1}{4}$ " inside diameter and spaced to occupy a length of $\frac{1}{4}$ ". The centre tap is earthed via a short direct lead.

Antenna coupling coil four turns, wound over centre of grid coil and connected to a two-pin socket fixed behind it.

The plate coil (L2) is soldered directly to pins 1 and 2 of the tube socket, and is wound as to provide a $\frac{1}{4}$ " space in the centre for an output link or the grid coil of the following stage. It has six turns $\frac{1}{8}$ " diameter, and the overall length is approximately $\frac{1}{4}$ ". If this coil is arranged so that the centre tap is on the side nearest the chassis, adjustment of the output coil is facilitated and the plate feed r.f.c. is kept out of the way. Half an inch of lead on this choke is sufficient to enable it to clear the coil and be led away to one side.

The r.f.c. used came from the American I.F.F. set. These chokes consist of



22 turns of number 28 or 30 enamelled wire, the diameter being $\frac{1}{2}$ " with a winding length of approximately $7\frac{1}{16}$ ".

NEUTRALISING PROCEDURE

Set the neutralising condensers to about $\frac{1}{2}$ " spacing as a convenient starting point. With the antenna connected and the r.f. amplifier in operation, feeding into a mixer or injecting 14 Mc. receiver, sundry "joys" and a high hiss level will probably be heard due to regeneration in the amplifier. Tune in to a relatively strong signal, then disconnect the h.t. supply to the r.f. amplifier (leaving the heater on). The signal will still "ride through" due to tube capacities, etc.

With an insulated screwdriver, e.g. a length of $\frac{1}{2}$ " polystyrene filed at the end to form a screwdriver point, adjust the neutralising condensers for minimum signal. Reconnection of the h.t. supply should now bring the amplifier into normal operation with freedom from oscillations.

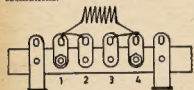


Fig. 3.—Resistor Strip mount for r.f. stage grid coil and neutralising condensers.

The main receiver tuning control, particularly if it is one with a reasonable reduction ratio, often provides a convenient means of keeping the signal "in tune" for such tests, being in effect an additional vernier control.

If a signal generator, etc., is used to supply a signal for v.h.f. receiver alignment and adjustment, it should be so placed that the signal is picked up via the antenna to preclude the possibility of direct radiation getting into the receiver. Small temporary antennae may help in this regard.

A h.t. supply of 100 volts is sufficient for the amplifier, the current drain being in the region of 20 Ma.

Inasmuch as it is a broad-band circuit, no difficulty was experienced in obtaining a sufficiently even response over the whole of the two metre band.

The balanced input is particularly suited for use with balanced feed lines, in this case 300 ohm ribbon feeder. Some modification to the antenna coil may be required for other types of line. In so far as co-axial feed line is concerned, probably the best method, in order to preserve the balanced input feature, is to use a "balun" (balance to unbalance. Impedance transformer) between the line and the amplifier input. Such a device, made from a piece of 75 ohm co-ax, will transform a 75 ohm unbalanced line to 300 ohm balanced output.

TWO TUBE CONVERTER

In the writer's case the r.f. amplifier was combined with the 2 metre 8J6 converter described in "Amateur Radio," January, 1954.

The complete circuit of the arrangement finally used is shown in Fig. 1a and Fig. 1b, whilst the chassis diagram (Fig. 4) shows the layout of the major parts, and essential dimensions. The

condenser across the mixer grid coil was dispensed with as optimum results were obtained with a three turn coil (L3) $\frac{1}{8}$ " diameter fairly close wound, and coupled about half way into L2. Too much coupling here can result in pulling of the oscillator, and also tends to make neutralisation ticklish.

The oscillator coil (L4) consists of four turns $\frac{1}{8}$ " long, with an inside diameter of $5\frac{1}{16}$ ". This gave more bandwidth than the coil originally used.

The oscillator tuning condenser C1 is an Eddystone 15 x 15 pF. split-stator (180 degree rotation) cut down, with the aid of a jeweller's saw, to one stator and one rotor plate per section. C2, a Ducon type TS2A 3-12 pF. N.P.O., ceramic trimmer, mounts directly onto the stator supports of C1. When adjusted to about half capacity, it sets the oscillator to the low frequency side of the band. The i.f.t., which should be enclosed in a shielding can, tunes to the converter output frequency of 7.4 Mc. Keep the plate lead from the mixer to the i.f.t. as short as possible, to reduce any tendency towards oscillation in this stage. The i.f.t. coil details are:—

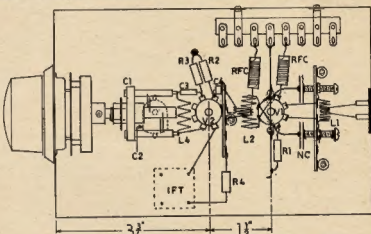
L5—28 turns close wound on $\frac{1}{8}$ " former, wound with No. 26 s.w.g. d.c.c.
L6—8 turns wound over bottom of L5, No. 26 s.w.g. d.c.c.

The tuning dial is a National "Velvet Vernier" control ex the "TU" series of disposals tuning units.

Current drain of this converter is about 27 Ma. with 100 volts h.t. If the converter is to be enclosed in a cabinet, then it is as well to select one which provides for a reasonable amount of ventilation rather than an "air-tight" type.

The tubes and the i.f.t. mount above the chassis, other components below. In this way, the possibility of oscillator drift, due to heat radiation from the tubes, is reduced.

When feeding into a receiver using a standard 455 Kc. i.f. channel, the frequency drift of the converter, after a few minutes warm-up, is negligible. A T9 note is obtainable when receiving c.w. provided a properly filtered power supply is used. "Stand-by drift" is eliminated by leaving the converter on during transmission periods.



THE SILICON CRYSTAL NOISE GENERATOR*

BY WILLIAM L. ORR, W6SAI

On the DX bands and on the very high frequencies the amount of noise generated by the receiver becomes a limiting factor in weak signal reception. The problem, therefore, is to design a suitable front-end for the receiver that contributes the least amount of noise and the maximum amount of signal amplification. A great many hours of time have been spent putting cascode r.f. stages in receivers, pulling out 6SK7s and putting in 6AK5s, and building grounded-grid pre-selectors.

The baffling enigmas in such undertakings is that it is very hard to determine whether such improvements merely boost the gain (and noise) of the receiver or actually hold the set noise down while giving a lift to the signal. Many fellows have become extremely unhappy when they have found out that their new preselector-creation will not allow them to read a signal that is pushing S6 on the receiver meter.

NOISE GENERATORS

Some time ago a simple thermionic diode noise generator was described for Amateur use in determining the efficiency of the input circuit of the receiver.† This noise generator consisted of a vacuum tube diode operating in a temperature limited condition. This means that there is sufficient plate voltage to saturate the available filament emission, and that if the plate voltage is increased the plate current will remain constant. Control of the plate current can therefore be regulated by varying the filament voltage.

Certain diodes, when operating in this condition, will generate a substantial amount of "his" or random r.f. noise. This his is of a very steady amplitude and may be used for measuring the sensitivity of the receiver.

The easier it is to hear a given amount of diode hiss over the inherent receiver noise, the more sensitive is the receiver. The diode hiss is proportional to the diode plate current, so a measurement of the excellence (or lack of same) of the receiver may be found by comparing the diode current to the amount of hiss heard in the receiver output.

A very well shielded signal generator could be used instead of the diode tube, but signal generators emit a signal on the order of milliwatts, and it requires expensive shielding and attenuation circuitry to get down to the microwatt level that is needed for a signal-to-noise check. Some form of generator that starts from zero signal and works up is much better than one that starts with too much signal and works down!

The diode tube noise generator has never quite "caught on," since it has three basic faults:

1. The choice of the diode tube is critical. Only a few of them (the most expensive ones, naturally) will work above 50 Mc. This washes out the two metre band where a noise generator is sorely needed.

Many years ago a "noise generator" article would have made the author a likely candidate for the straight jacket. Today there is a big field of application for just such a device. So big, that we have reprinted from "CQ" this greatly improved version of the silicon crystal noise generator. It is so simple that it could be "thrown together" in a half-hour.

2. The diode generator needs both a filament and plate supply. It also needs some means of controlling the filament supply over quite a large range. This calls for a variable voltage transformer or a high wattage rheostat.

3. If the supply is a.c. operated, trouble will be encountered with line pick-up of stray radio signals that will introduce an error into noise measurements. Batteries will add weight and cost to the unit.

THE SILICON CRYSTAL

An excellent substitute for the saturated diode tube is a silicon crystal. When a small current is passed through a silicon crystal in the direction of highest resistance, a constant r.f. noise of small amplitude is generated.‡ No filament supply is needed, and the exciting voltage for the crystal may be obtained from a few flashlight cells. The silicon crystal is the only type that will perform this feat. Germanium crystals will not work. This washes out the 1N34 type crystal. The war surplus 1N21 and 1N23 silicon crystals are excellent performers, and are still available on the surplus market at low cost. They have been used for noise generators up to 3,000 Mc.

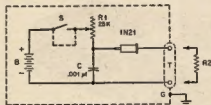


Fig. 1.—Wiring Schematic.

The crystal diode noise generator is a relatively high impedance source of noise, while the diode tube can be considered as a low impedance constant current generator. This fact must be taken into account when one uses the crystal type generator. All comparative signal-to-noise measurements must be made at the same impedance value. A comparison cannot be made if different impedance loads are used. Since most Amateurs have one standard feed line

value, the generator can be set for this value and no trouble will be encountered. This is a fairly small price to pay for such a handy device!

CONSTRUCTION OF A CRYSTAL GENERATOR

Where else can you get so much for so few parts? Look at Fig. 1! The noisy crystal and C form a closed circuit at radio frequencies, placing the generated noise directly across the antenna terminals of the receiver, which are connected to the terminal strip T. Across C is placed the d.c. current supply. A maximum current of six milliamperes is needed, so four small "pen like" cells will last for over a year. The current is controlled by R, the calibrated potentiometer, and the switch S (mounted on the back of R) is used to turn the unit off when it is not in use. The whole generator is built into a small metal box that acts as a shield can for the unit. A ground terminal lug is bolted to one top corner of the box to connect the box to the receiver ground terminal so that no r.f. potential will exist between the generator box and the receiver.

The silicon crystal and the condenser C must be mounted to the terminal strip T by very short leads. Extreme care must be taken when the wire leads are soldered to the crystal. The crystal should be held with a damp rag and the connections made very quickly with a hot iron. If you hold the crystal tightly in one hand, I assure you that you will not let it get too hot! If you are foxier than I was, you might take a Littelfuse holder and convert that into a crystal holder. I was too lazy to do this, and took the easy way out.

Since the flashlight batteries will last their shelf-life in this unit, it is permissible to wire them right into the circuit. Be sure to tape the exposed ends of the battery so they will not short out to the case. A small metal clamp can be used to hold the batteries in place.

If the receiver has a co-axial receptacle input, a matching plug may be put on the noise generator and connection made between the two with a short piece of co-axial line.

Only one thing is missing now. A composition resistor equal in value to the desired line impedance at which the measurements are to be taken is placed across the output terminals of the noise generator. A small one-half watt resistor will be satisfactory. If the co-axial plug and line are used, this resistor should be mounted inside the generator. The unit is now complete and ready for operation.

OPERATION OF A GENERATOR

A typical test set-up for the checking of signal-to-noise ratio of a receiver is shown in Fig. 2. As mentioned before, the resistor R2 is a non-inductive composition resistor having a value equal to the input impedance of the receiver, or to the chosen impedance at which the checks are to be made. The noise generator is connected to the receiver

* Reprinted from "CQ," June, 1952.

† B. Goodman, "How Sensitive is Your Receiver," "QST," Sept. 1947, p.13.

‡ S. N. Van Voorhis, "Microwave Receivers," Vol. 2, Radiation Laboratory Series, McGraw Hill Book Co. N.Y.C.; W. L. Orr, "A Practical Crystal Noise Generator," "Radio and Television News," June, 1951.

and the case of the generator is grounded to the chassis of the receiver. An output meter is connected to the audio circuit of the receiver and the receiver is adjusted as follows:

The a.v.c. and b.f.o. are both turned off. The r.f. gain control is placed full on, and the audio control is advanced until a reading is obtained on the output meter. This arbitrary reading is taken as the zero reading, or reading of natural receiver noise. There should be no pick-up of random signals in this noise, or readings will be in error. (If you don't get any noise from the receiver under these conditions, the overall gain is too low; you don't need a noise meter, you need a new receiver!)

The noise generator should now be turned on, and the knob turned until the receiver output meter registers a 3 db increase. (This corresponds to a voltage increase of 1.41 times the "zero" or original value.) The potentiometer reading on the dial scale now becomes the criterion of signal-to-noise ratio for that particular receiver. The less the reading (more resistance in the diode circuit), the better the signal-to-noise ratio of the receiver being tested.

The readings taken with this unit are arbitrary and cannot be referred to as "so many db above thermal noise." But they do give a ready means of comparing various changes that are made in the receiver. Different receivers may be compared under the same conditions, using the same load resistor.

You will find some startling things that may turn up during receiver checks. Some receivers simply refuse to "put

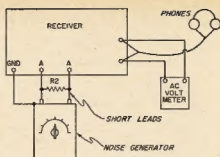


Fig. 2.—A typical set-up for Signal-to-Noise Ratio Measurements.

out" when a 52 ohm input load is used. This is a handy thing to know if you contemplate a new receiver—especially if you are using RG-8/U feedline! Some receivers will exhibit plenty of gain and "hop," but will fall down badly when this acid test is used. Others will have good signal-to-noise ratios at some frequencies, and poor ratios at other frequencies. Some cannot be aligned properly at both ends of the bands! You might also find that maximum signal-to-noise settings of the r.f. padders and trimmers do not coincide with the settings for maximum gain! This will really throw you for a loss if you are aligning your receiver by the signal pick-up method! If the receiver is aligned by ear, it would not be aligned for best signal-to-noise ratio.

By using this noise generator it is easy to obtain the maximum results from your particular receiver. If these maximum results are not good enough for you, it will give you a reliable guide for testing the efficiency of the changes that you make.

Any meter capable of reading a.f. output signal of the receiver; usually the "output" range of a multimeter across the speaker output terminals will give sufficient reading.



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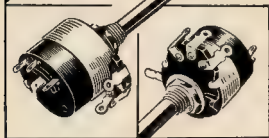
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VK4W	51139	VK4W	50104
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MAX HOWDEN, VK3BQ

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ANYONE who tunes the 144 Mc band knows Max Howden, VK3BQ, because he is one of our most active men on this band, and if you live within a mile and a half, as I do, will testify to the efficiency of the 45 watt signal radiated from that station.

To see how he does it, I paid him a visit and now pass on my findings so that we all might learn first what his ideas are on v.h.f. generally.

Max, as we all know, is one of our pioneering Amateurs who first came into the limelight in May, 1923, when he won the Trans-Pacific test by logging 22 stations. The band used was 150-250 metres, for in those days all wavelengths below about 250 metres were allotted to Amateurs. The receiver used to win the contest is now in the Victorian Division rooms.

In the following year, with the granting of transmitting licenses, contact was established on c.w. with W6AHP on 2nd November, 1924, and then G2OD in England on 13th November, 1924, also on c.w. The wavelength used was 87 metres, which was v.h.f. in those days. QRM was bad in the United States because about 22,000 Amateurs were licensed at that time, and to avoid this, the VKs pushed a little higher in frequency.

Since those early days, Max has retained his interest and has always been found helping to pioneer the higher frequencies. In 1938 I can remember him on the 28 Mc. band, which, with 56-80 Mc., was quite high frequency in those days.

Today his interest is mainly 144 Mc. and being a keen experimenter, he favours the breadboard type of construction.

The transmitter is fairly conventional, consisting of a 6AG7 triode, with output on 24 Mc, 5763 doubler, 2E26 tripler, and 829B final, with an input of about 45 watts. This feeds a beam aerial which we suspect is the main reason for that terrific signal.

This beam is virtually three 4 over 4 beams, side by side and fed in phase, making 24 elements in all.

Two horizontal longerons, one above the other, are attached to the mast at their centres, and the booms of the four element sections are attached at right angles to this.

Bracing is carried out with 100 lb. nylon fishing line, and Max is most enthusiastic about the way it does the job. Nylon line possesses quite a deal of elasticity and allows the elements to give slightly in heavy gusts of wind. If you are keen on fishing, you will know how very strong this nylon line is.

Speaking of the beam generally, Max does not think the addition of the third 4 over 4 was worth the effort involved and considers that for all practical purposes the pair of 4 over 4's he had up previously was nearly as good from a result point of view and a lot less complicated to phase and match properly.

His only hint was to make sure that the pole passing up between the pairs of four element beams is a wooden one, as the losses are high with the ends of the elements near a metal pole.

Rotation of the beam is done by means of a shaft down the centre of the tower, driven by a right angle drive from inside the shack. An old motor car steering wheel does the turning.

The beam is extremely sharp and a variation of 10 degrees will cause a noticeable drop in signal strength.

The receiving side is handled by an AR88 receiver fed from a crystal locked converter, and it was this converter which caught my eye.

The signal to noise ratio was extremely good and the stations being received stood out with a perfectly quiet background. This was most noticeable on the country stations.

The converter uses a 6J6 neutralised 1st r.f. closely coupled to a 6AK5 2nd r.f., operating with only 8 volts on the screen and 100 volts on the plate. One half of a 6J6 is used as the mixer, again with only 8 volts on the plate, whilst coupling to the AR88 receiver is taken off the cathode. The plate of the other triode is left floating and oscillator voltage is injected through the grid of this second section.

An 11 Mc. crystal in a regenerative circuit, using a 6SH7, feeds a 6AK5 harmonic amplifier which in turn feeds into the 6J6 grid mentioned previously. The output of the 6SH7 is at 44 Mc., and the 6AK5 at 132 Mc., which beats with the incoming signals to give output in the range 12-16 Mc.

Max attributes the low noise of the converter to the triode 1st r.f., the use of low screen volts on the 6AK5 2nd r.f. and also the 6J6 mixer plate. In any event, he has found this converter superior to the cascade front end.

He passes this suggestion on to all who strive to build the ultimate in converters for v.h.f. bands. "If you are not satisfied with the converter you have, don't pull it down, build another one and then you will have the old one as a standard of comparison. If the new one is better—then pull the old one down, but not before."

Sound advice from an "Old Timer" who is still in the forefront of Amateur Radio today, and a leader in the latest techniques.

To cap our visit, a break-through occurred to Tasmania and VK7TF and VK7LZ were worked. This rounded off a very interesting evening, from which we made two interesting observations. Amateurs, no matter what age, retain a youthful enthusiasm which keeps them young and alert, and also that Max's years of experience are standing him in very good stead when it comes to modern v.h.f. work.

This Contest, which was previously postponed owing to the Flood Emergency in New South Wales, will now be held on Sunday, 3rd April, 1955.

The rules were published in February, 1955, "Amateur Radio." Rule 1 is now amended to read "Sunday, 3rd April, 1955," and Rule 9 (return of logs) to read "Saturday, 30th April, 1955."

Remember, Contest is on Sunday, 3rd April, and logs are to be returned by Saturday, 30th April.

Low Drift Crystals FOR AMATEUR BANDS

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... 2E26

Amateurs agree that the A.W.V. Radiotron Beam Power type 2E26 is ideally suited to their VHF rigs. Designed specifically for such applications, this sturdily built unit will give better performance, longer life and added reliability to your transmitter.

Consider these features . . .

- (1) **HIGH POWER:** A single A.W.V. Radiotron-2E26 operated at its ICAS ratings will take an input of 33 watts at 500 plate volts in class C telephony at frequencies as high as 150 Mc., and 40 watts at 600 volts at 54 Mc. It will take an input of 22.5 watts at 415 plate volts in class C telephony at frequencies as high as 150 Mc., and 27 watts at 500 volts at 54 Mc.
- (2) **LOW DRIVE:** At 144 Mc., about 2 watts of RF must be delivered to the grid circuit. A 6V6-GT is a satisfactory driver tube.
- (3) **ECONOMY:** Small in size with high power sensitivity, and high efficiency the A.W.V. Radiotron 2E26 makes an excellent final amplifier for a compact, inexpensive VHF transmitter operated from a simple low-voltage power supply.
- (4) **CONSTRUCTION:** The 2E26 has short internal leads, a rugged button stem fitted to an octal base having a low-loss mica-on insert and metal sleeve, excellent internal shielding, and double-ended construction for isolation of grid and plate circuits.
- (5) **APPLICATIONS:** The 2E26 is an excellent medium-power final amplifier for 6 and 2 metres. As a doubler, it will supply more than adequate power to drive an 829-B or 815. It will deliver 15 watts of 2-metre RF as a TPTIG oscillator.

Listed below are ratings and characteristics of the 2E26 and other types from the comprehensive A.W.V. Radiotron range which are ideal for amateur use.

Type	Heater Volts	Dimensions in inches		Transconductance	Max. Plate Ratings	
		Length	Diam.	Micromhos	DC Volts	Dissipation (W.)
2E26	4.1	3 21/32	1 5/16	3500	700*	16.5*
813	10.0	7 1/2	2 9/16	3750	2250†	125 †
807	6.3	5 3/4	2 1/16	6000	750†	30 †
Max. Plate or Anode Ratings						
865A	2.5	6 9/16	2 7/16	Peak Inv. Volts	Amp. Av.	
				10 000	0.25	
				Operating Volts	Operating Current MA	
OC3 OD3	—	4 1/8	1 9/16	108	5	40
				153			40

*For Transmitter Mobile Service

†For Intermediate and Commercial Amateur Service



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DENMARK PAYS A TRIBUTE TO VKIEG

The following letter, which is self explanatory, has been received from Borge Peterson, OZ2NU, and we publish the letter, together with the enclosure as received.

Box 335, Aalborg,
Denmark.
24/11/54.

Editor "A.R."

Dear Sir and Friend,

I am sure it is not often that you receive material for your magazine "Amateur Radio" from Denmark, but I am sure that you will allow the enclosed article to be published in your magazine. We are proud of the fact that the Australian Government has found the Danish ship "Kista Dan" useable for the expedition to Robertson Land and Mawson.

Your Amateur friend, who is writing and sending this, is happy to have been working with the building of the ship and to have had the opportunity a few days ago to hear a lecture on the voyage to Robertson Land by Captain H. Petersen, the chief on "Kista Dan," during its stay here on the yard where it was prepared for its next trip to the Antarctic.

With my best compliments and 73,

BORGE PETERSON, OZ2NU,
Shipbuilding Engineer, and
Traffic Manager E.D.R.

ACKNOWLEDGMENT TO BILL STORER, VKIEG

It is always appreciated by DX hunters when someone in the ranks of Radio Amateurs makes it possible to "get" a new country. We know of several cases during the last few years as announced in the DX columns of the different Amateur magazines. One of the most well-known through 1954 has been Bill Storer, VKIEG, on Robertson Land in the Antarctic. We remember also the Chilean Expedition to Easter Island earlier in the year (1954).

It is of interest that both the ships which have been used by these two expeditions were built on the shipyard of Aalborg in Northern Jutland.

The "Kista Dan" has for a few days been back here on the yard for a necessary "make up" before going down again to the Antarctic. The writer was happy to be present during a lecture given by Captain H. Petersen, chief of the "Kista Dan," who told about the voyage to Mawson and about the people making the expedition.

As a Radio Amateur and as one of the builders of the two ships mentioned, the author takes the opportunity to greet the men who have been pioneers and furthermore, have been excellent ambassadors for the Radio movement.

The expression of gratitude isn't coming from the writer alone, but from innumerable places around the world, from DX operators favoured with contacts with Bill in the Antarctic.

In the spirit of this, the Traffic Department of E.D.R.—the Experimenting Radio Amateurs—has awarded a certificate of acknowledgment to our Amateur friend Bill Storer, VKIEG, and our thoughts are following it on its way down South with the "Kista Dan," struggling its way through the Antarctic Ocean—an effort worth a certificate in itself.

Thank you Bill, a thank you from our hearts.

POLICE NOTICE

One thousand microfarads reward is offered for the capture of Hop Along Capacity who escaped from Pushpull Primary Cells yesterday armed with a carbon rod. He is wanted for the inductance of an 18 year-old coil. Pushpull E.M.F. have been searching the magnetic field for ampere hours. It must be noted that when cornered he will offer great resistance which must be neutralised. Ohm town dielectric agents please pick up and relay.

VACANCY IN MODERN ELECTRONIC LABORATORY

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351 Darcbin Rd., Fairfield, N.30,
Vic. Telephone JX 4915

AUSTRALIAN V.H.F. RECORDS

TWO-WAY WORK				
Band	Stations	Date	Miles	World Rec'd
80	VKSL-WYACS/VKHS	36/3/47	2300	10500
	VKHM-VRCB	30/12/53	3400	
	VKTBQ/LZ-VKQDB		3311	
144	VKSGM/3-VKLTZ/TF	8/2/58	317	1400
222	VKJAFJ/3-VKJAAF/3	21/2/54	53.5	
276	VKBAW-VKBAKE	11/12/48	61.6	
1215				100
2300	VKBAW-VKBAKE	18/2/50	9.1	180
3000				—
10000				108
21000				800 ft.
30000				—

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions, if you can better the above figures. Please give exact details of both stations' locations for checking, when submitting your records.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

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OR BOOKSELLERS IN YOUR STATE

THE DOWNS ZONE Q'LAND DIVISION W.I.A.

are holding a

CONVENTION

at PALM BEACH on

30th APRIL, 1st and 2nd MAY

All Amateurs and S.w.l's. invited.

A Scramble will be held on 30th April and 1st May. Try and contact these stations.

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- EDDYSTONE Cat. No. 700 114 Mc. Tuning Assembly 15/4
64/1 plus 12½% Sales Tax
- EDDYSTONE MICRODENSERS—

Cat. No. 478 Split-Stator 15 x 15 pF.	14/4
Cat. No. 500 Single Section 15.5 pF.	14/4
Cat. No. 581 Single Section 60 pF. (screwdriver adjust.)	18/5
Cat. No. 582 Single Section 60 pF.	18/5
Cat. No. 583 Split-Stator 25 x 25 pF.	18/11
Cat. No. 584 Butterfly 34 x 34 pF.	12/11
Cat. No. 585 Single Section 100 pF.	22/1
Cat. No. 586 Single Section 140 pF.	24/7
Cat. No. 587 Butterfly 15 x 15 pF.	18/5
Cat. No. 588 Single Section 27.5 pF.	16/4
Cat. No. 589 Single Section 54 pF.	18/5
Cat. No. 738* Single Section 100 pF. (double end plates, for use in Oscillators and V.F.O.'s.)	22/10
Cat. No. 739 Butterfly 5 x 5 pF.	20/6

Above Prices subject to sales Tax at 16-2/3%
* Cat. No. 738 at 12½% Sales Tax.
- EDDYSTONE MINIATURE MICRODENSERS—

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Cat. No. 552 Split-Stator 15 x 25 pF., 180 degrees rotation	28/2
Cat. No. 553 Single Section 50 pF., 180 degrees rotation	25/7

Above Prices subject to Sales Tax at 16-2/3%.
- V.H.F. SOCKETS, W/CANs—

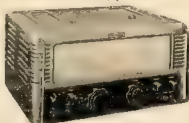
Ediswan Cils "Fluon" B7-G	16/6
" " B2-A	11/3
(For operation beyond 200 Mc.)	(Inc. Tax)
Belling & Lee "Nytron" B7-G	7/4
" " B2-A	8/2
	(Inc. Tax)
- BELLING & LEE 9-Pin EF50 Type Ceramic Sockets, 9/3 inc. Tax.
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Eddystone's latest V.H.F. Communications Receiver of excellent construction and superlative performance. Frequency range continuous from 19 Mc. to 165 Mc. in six bands. 19 valves of latest design. "S" meter incorporated. This Receiver has many refinements, including F.M. and M.F.M., muting features. An ideal professional Receiver for Amateurs and Experimenters. For A.C. mains operation only.

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A Complete Range For Every Purpose

DESK OR HAND MICROPHONE

MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level —55 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2 1/2" spherical diameter.
Connector—Standard International 3-pin.

MIC 16



£24/19/6

GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

SPECIFICATION

Output level: —55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—8 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2 1/2" x 2 1/2" x 1"

TABLE AND STAND MICROPHONE

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where F = c.p.s., R = megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level —50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).

Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

MIC 22



LAPEL MICROPHONE

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. —55 db ref. 1 volt/dyne/cm².

Recommended load resistance—5 megohms.

Frequency response—level throughout the whole of the audible spectrum.

Capacity—0.0015 uF. at 1000 c.p.s.

Impedance—100,000 ohms at 1000 c.p.s.

Cord—6 ft. shielded cable.

Size—1-9/16" wide x 2 1/4" long x 1/8" thick.

HAND OR DESK MICROPHONE

MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS

CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.



(MIC 32 illustrated)

MICROPHONE INSERTS



(MIC 23 illustrated)

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HEATER		Series		Parallel	
Vb	12.6	6.3V	
Rh	8.66	1.2A	

CAPACITANCES

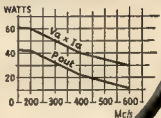
Each Section			
cg1-all	6.5	μF
ca-all	.. .. .	2.0	μF
Two Sections in Push-Pull			
cont	.. .. .	1.5	μF
clb	.. .. .	4.0	μF

LIMITING VALUES

As Class "C" push-pull amplifier for C.W. Telegraphy or for F.M.

Va max.	.. .. .	400 V
pa max.	.. .. .	2×10 W
Vg2 max.	.. .. .	250 V
pg2 max.	2×2 W
Vg1 max.	-75 V
pg1 max.	2×0.5 W
Ik max.	2×85 mA
f max. (at reduced ratings)	600 Mc/s

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A high performance Double Tetrode for the new U.H.F. wave-band allocations

Providing 15 watts output at 500 Mc/s, and with an effective upper frequency limit of 600 Mc/s, this new Mullard double tetrode, the QQV03-20, is an ideal valve for communications equipment designed to operate in the new U.H.F. wave-band allocations.

As a result of new and important design features, this valve has the outstanding advantages of high anode efficiency, excellent power gain, low filament consumption, and small physical dimensions. In addition, being of conventional all glass technique, the QQV03-20 does

not require the complex and expensive circuitry that is normally associated with the disc-seal type of U.H.F. valves.

This double tetrode has special advantages in compact communications equipment, where, due to its small size and low filament consumption, it enables maximum savings in space to be made.

Brief technical details of the QQV03-20 are given above. More comprehensive information will be gladly supplied on request.



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M17.53

FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

The February fixture of the V.H.F. Group was a Direction Finding Field Day held on 19th. There were seven stations taking part, as well as several home stations. An area within 40 mile radius of Sydney was divided into defined localities which were balloted for. A station could operate anywhere within the boundaries of the area. The Senior Area station was allocated 20 points, to which were added 3 points for locating a station within a ¼ mile, 2 points within a ½ mile, 1 point within 1 mile, and points were deducted on the same basis if the station was located by another. This proved to be an interesting contest, and the results being 12ANF 23 points, 20A 23, 12AOA 20, 2HE, 2HL and 2AJZ 9, 12AO 10.

On Thursday, 17th February, the 44 Mo. band was wide open in the Western-South Western section of NSW and through to Northern and North-Western Victoria. To use Hugo's (IWH) words, "fantastic conditions existed". Contacts made included 1A3O-3C1 5 x 7 each way on phone, 1WH-3ATN 5 x 5 on phone, 1A3O-3C1 5 x 5 on phone, 1A3O-3C1 5 x 5 on phone. The contact between 1WH at Fortitude and 3ATN at Birchup took place between 2330 and 2353 hours, the distance being about 360 miles.

The March meeting of the Group took place at the Petersburg Technical College, Crystal Street, Petersburg, on Friday, 4th. The lecture was given by Mr. J. H. B. Miller, M.A., on the detection and suppression of radio interference, which was a very interesting and interesting discussion on power line and sun-spots. The speaker pointed out that the sun-spots are countered throughout the State on the broadcast band. Noel expressed a theory which is being confirmed in practice that a large proportion of the interference is due to the sun-spots on the teaching insulators, cross arms, and stays on power lines becoming loose, thus allowing the sun-spots to be in contact with the line and ground wires.

Other items of business discussed at the meeting included a motion relating to the annual election of officers of the Group and it is now the policy of the Group to hold its election of officers at the meeting following the annual meeting of the N S W Division. This means that the officers for 1953-5 will be elected at the April meeting.

A letter was also received from the Divisional Secretary stating that holders of the Limited Licence were to be admitted to the Institute as full members.

The Field Day which was mentioned in last month's notes has been postponed until the end of April due to the Group taking part in a search and rescue exercise organized by this Division. This Field Day will now be the annual Autumn Field Day and will be on similar lines to the Spring Field Day last October. Full details will be given over IWI and mailed to country members.

The mention of country members brings to mind the policy of the Group to keep the portion of the 144 Mc band between 144 and 144.1 Mc. clear for country contacts. Country stations who try to contact Sydney are asked to use that portion of the band as that is where most attention is given when looking for signals from the country. —JAPQ.

VICTORIA

Last month proved a really excellent one for 3 M DX with practically every country station coming into Melbourne. The outstanding performance of the month was that of Ray 3M3, who worked Hugo 3W4, a distance of 17,000 miles. Both worked 3M3 on 100 Mc. and phone, and the distance of this haul is approx. 300 miles. Another c.w. and phone contact came when 3W4 worked Syd 3CI at Naresburi, a distance of 350 miles. Syd 3CI also worked 3M3 on 100 Mc. and phone. He also made a contact with 3ATN also heard NR 2ZD at Warragul. Another first is reported this month in v.h.f. activity to Max 3BQ who made a contact with Don 3RS at Albury. This makes the 3M3 station the only one in the area to have worked stations in both the c.w. and v.h.f. bands. Syd 3CI also worked 2RS and 3RW heard 3RS, but no contact took place.

During the month also, 32L, 35E and SFO of Ballarat JANQ Warmblood, SAKR West-
moreland JANQ Warmblood, 32L and 35E
gains, 3CI Nungabie, 3UT Tetapu, 3HG Coleraine
and 7LZ were all heard in Melbourne at Q8.
3HQ heard 7LZ although the Launceston to
Melbourne flight was not scheduled.

On the Fox Hunt last month, Bill 3ZAC and
Bob JOJ acted as control stations. Many thanks
to Bill and Bob. The Fox was successful on the
hunt and was seen by the Fox Hunt Club.
Up by waiting for the Williamstown ferry which
had closed down for the evening two hours pre-
viously, and on the run back along William-
stown beach, and on to the beach at the end of
Ray 3KCD. On the third run, 3VZ was first.

The final location was at the home of Graeme, JZAA, where twenty-five of the Group rounded off the evening with supper and a post mortem on the dolags of the evening. We wish to thank Graeme and Joan for their friendly hospitality in opening their home to us. We welcome to the Hunt for the first time Max JZAW, Ray JZAE and also Ray SKD.

The V.h.f. Group wish to extend to Max 2BQ their best wishes on the 20th Anniversary which occurred during the month, of his first spanning the Pacific with radio signals. Max is the most active v.h.f. worker on the band in VKI.

At last month's W.H.F. meeting, Hans ZAHN gave an extremely interesting lecture on "Electronics in Meteorology" to a capacity house. Hans went to a very great amount of trouble in preparing the lecture and even when 11:30 came around, Hans still had a considerable amount of material which he was unable to give us. It is a long time since one lecture has been able to hold the interest of the meeting for 3 1/2 hours straight. It was a most enthusiastic audience who passed a vote of thanks to Hans at the conclusion.

The second V.H.F. Field Day for the year was a very successful one with over 46 of the gang taking part. This is the largest number of participants to take part in the field in the past three years.

There was intense competition between the stations. In the afternoon, several of the stations reporting over 20 contacts. Some of the best contacts were JUL at Mt. Nickles to IRS at Albany, SATN at Mt. Airline to WLS at Mt. Airline, and SOI to SOI on Churehill Island to 3LN on Mt. Macedon. Alf 3IE, with one watt on Mt. Dandenong, had some very excellent contacts. The weather was very good and the day was a great success. The V.H.F. Field Day proved a most enjoyable one for all those who participated.

SOUTH AUSTRALIA

You know how it is chaps, holidays and domesticity before all else and before you know where you are, another month has shot by and, well, I could go on for ever. Of course there has been great glee in the sub-editorial household and I'll never be allowed to forget my sub-sub-editorial lapse.

However, haven't been unoccupied and I have some more details of the so-called "Butler oscillator" which you like, cathode-coupled oscillator) for you. It is the simplest of the easiest to get going and the power output can be increased by making the cathode load impedance smaller. The power output is about 100 mW. When using a 12AT7, with output on the ninth overtone, there is hardly enough to drive a 500-ohm load. The 12AT7 has a lot of extra plenty of output for the mixer stage in a xtal converter though, and the 7th overtone doubled again. In the second half of the 12AT7 is quite a bit of extra power, and the 12AT7 is quite one and can easily be missed. The xtal holder provides sufficient capacitive feedback to take the 12AT7 into oscillation. The 12AT7 is a Franklin's self excited oscillator, with maximum oscillation appearing at widely spaced frequencies. In these circumstances the xtal does not effectively load the oscillator. The effect is effected by paralleling the xtal holder with a coil which resonates on a frequency just below the xtal frequency. The xtal then provides an inductive reactance and very little energy can get "around" the xtal. The coil then provides the inductive reactance and accept energy from the plate circuit.

A recent copy of "CQ" gives further details and I found the A.R.R.L. Handbook (1953 Edition) lists the circuit in the v.h.f. section.

As Warwick has used the only notes concerning the v.h.f. activity in the S.E. area, I shall merely thank Stewart GMS for forwarding them. Further northwards in Narracoorte the enthusiasm is mounting and Bram Jebett now has his L.A.O.C.P. and call sign. Congrats Bram, perhaps you can entice Wally to enter into competition! A xtal converter should work beautifully in front of that "750"

WESTERN AUSTRALIA

144 Mc. A few stalwarts still keeping the flag flying. 6RO 6CC and 6GB have been putting in an appearance on occasions. Still little or no activity from 6HK. I must fix that feeder! 6SJ has been fairly quiet on 6 mk, but plotting great things for 2 mx.

issued to report this month, but some of the yet-to-be active types are showing signs of progress. 6ZAS now has a beam up at 23 ft, and the rx seems to be perking as well as an AR30 can be expected to perk. The tx is under way and an RK34 has been assigned the duty of p.a. 6ZAQ threatens activity by "21st August at 8 p.m."—isn't it David? Anyway something may even have been heard from that

direction by the time this appears in print.

SAZAV was treated to an invasion the other night when 68J, 6WJ, 6ZAZ, 6ZQA, 6ZAS and 6HK all rolled up unexpectedly. However, after initial surprise was overcome, a fine evening was had by all. Thanks Don! This, by the way, after the gang had visited 6ZAZ's apartment.

62AA had been plotting a spot of portable activity during lunch hours some time in March - more to report there later. Via 62AA comes word that the "new" N.S.T. has been organized. Howard at the moment has no one to work, but has run tests with himself as sole and spilling out the car. The car is being driven forth in the car with the rx. The 62A mops up with a superregen with rf stages and a tuned circuit. A "xialer" gear before long and then perhaps a 600 cycle oscillator in three Rock if possible. So there you are DW! 62AA spends quite a lot of time just listening, waiting for something to happen. 62AT should have finished N.S.T. by now, so should have a little more time to chase drive to get it all set up. It will probably take some considerable time to go with the aforementioned N.S.T. and activity is therefore at

288 Mc Signs of activity on one metre have been stirring again. 2ZAV has a very neat modification of the standard 2ZAV set-up for the band and recently contacted 280 over two or three miles with good signals. Tests with 2ZAA at 14 miles proved negative however. Wally has been endeavouring to put a stabilised transmission on the band, but eventually resorted to a s.s.o. Have you found the right metre yet Walt. —

NEW GUINEA

Conditions on 80 Mc. from Port Moresby during December, 1954, were very poor, with several stations heard, but not worked, namely 4HK, 8BO, 5ADT, 4NG and 4WD. After the New Year, things looked up a little allowing for the fact that 4HK was not working. The only contacts were 4ZLW and 4ZLX, but no other VKs. The 2ZLs broke through in the afternoon only and 10 2ZL1, 2ZL3 were worked before the band closed for good. Nothing else heard. Chased VRMCG daily, but not even a weak carrier, even when he was working 4NG and 4ZL. At 4.30 AM, 4ZL3 was converted to 4ZL4 and running 35w. to 823, but now 4ZL4 is a w. beam at 80 ft. instead of 20 ft.

Both Frank SFN and myself are interested in working into VK on 2 mhz. We both have gear going and will be ready by next Xmas to run checks with northern VK4 areas. If such can be arranged, I intend taking the 5CR332 to Burn's Peak—close on 1,000 ft—overlooking the sea to the South and setting up a 10 ft beam.

The D.C. G/A vhf. on 14 Mc. from this site works aircraft to almost 350 miles. It operates with input power below the Amateur limit and merely a ground plane antenna. Truly, the aircraft are usually at 8,000 to 7,500 ft., but likewise their antenna system is low to nil. The vhf. antenna system is a dipole at both ends of such circuit, the signal would be terrific. The above performance is a normal condition unassisted by the vagaries of propagation conditions and it gives some indication of the Amateur possibilities of spanning the Coral Sea. Some under those rare, but favorable, conditions.

Would like to hear from anyone interested in the above, together with their opinions as I can't claim any experience on 144 Mc., my greatest DX being QSOs with 87N about 1 mile distant.—**5132**

WIRELESS INSTITUTE OF AUS.

NEW DIVISION)

A.O.C.P. CLASS

The next A.O.C.P. Class will commence on 23rd April, 1955, and all intending Amateurs are requested to contact the above address.

Radio Theory and Morse Code instruction. Duration of class is six months. Fees moderate.

FEDERAL, QSL, and DIVISIONAL NOTES

FEDERAL N.S.W. FLOODS

Although the full story is not yet known and it will be some time before full details are available, the time is appropriate to record a number of thanks to the many amateurs who rendered such valuable service during the recent Flood Emergency in New South Wales.

One of the striking features was how smoothly the emergency net went into operation and congratulations are therefore due to those responsible for its organisation.

In view of the disaster achieved, it seems a pity that this has led to a public expression of various viewpoints which would have been better handled through the Divisional and Administrative channels. Federal Executive is always conscious of its duties of representing the Federal Council when dealing with the appropriate administrations in regard to protecting the interests and presenting the Amateurs' point of view.

VES PAPUA AND NEW GUINEA DIVISION

Federal Executive is pleased to announce that following a vote of Federal Council, steps are being taken to effect the necessary Constitutional changes for the final implementation of the Papua and New Guinea Division.

Executive is pleased to welcome to the Division in welcoming this new Division to the Institute with such an enthusiastic band as Frank Nolan, VK4FVN, and Doug Resdale, VK4FVW. Others who will join with them are certain that the Division will go from strength to strength.

The local people are most generous in supporting the local emergency net. Following example illustrates. During the hook-up on 7 M. on Sunday, the Wau members suggested that the transceivers might form a club. Within 10 minutes, donations of a transceiver, batteries and some ZLS in cash had been received, and all from local people who listened to the hook-up. Apart from this, club rooms, complete with free light and power, will be provided by the Wau citizens.

With more understanding and assistance from the people about, one can be certain that the new Papua and New Guinea Division will be a splendid adjunct to the Wireless Institute of Australia.

AMATEUR ADMINISTRATION APPOINTMENT

Federal Executive and members will wish to congratulate Mr. L. Pearson on his nomination to the position of Controller of Amateur Radio. The Department has given him an insight into the administration of the Amateur Services and as he himself is an active Amateur, he has a personal understanding of our problems.

He follows a worthy line of predecessors in Mr. J. Malone and Mr. Martin, all of whom have been most helpful to the Institute. We wish Mr. Pearson a long term of office and hope that the cordial relationship which exists as previously.

O.R.E. TO MR. MALONE

Mr. J. Malone, one time Chief Inspector (Wireless) and more recently chairman of the O.T.C. has received a well merited award of the O.T.C. Medal for his services. He has felt sure that all members join with us in expressing these sentiments.

ANOTHER O.B.E.

Another O.B.E. award of interest to Amateurs generally is that of one to Mr. J. Clarricoats, Secretary of the Australasian Radio Society, British Isles. Mr. Clarricoats has held this secretarial position for the past 35 years and the Wireless Institute of Australia sends heartfelt congratulations.

FED. CONTEST COMMITTEE

The Committee acknowledges receipt of the following logs for the Ross Hull Contest: VK4, 3ZL, 3ZG, 4GG, 4NT, 4NG, 4WD, 5AS, 5JO, 5MK, 5QR, 5ZL, 6BO, 6TZ, 6ZL 18T, 2AJO, 2AGK, 2DZ, 3ZL, 3ZG, 3ZL.

A quick perusal shows that more than 110 VKs and more than 40 ZL stations participated. VK6DB and VK6CQ added interest.

FEDERAL QSL BUREAU

RAT JONES, VK8L, MANAGER

R.J. Storer, VK1EG, was scheduled to QRT at Mawson on February 11 according to QRT VK4FJ. The itinerary then was to proceed to

Heard Island to assist in packing up, thence to Kerquellon for fuel and water, and homeward bound. Confirmations for 33 countries of the 111 worked, had been received by February in Melbourne. I have since despatched should make the totals much higher. No news has been heard of VK1EG since the day of the "abominable snow men" since their departure.

Melbourne Amateurs were delighted to meet Bill and Vivienne WPM, better known as WPMRQ of the immediate pre-war years. Bill was a "power" in the land in those days running a two-way net. He is now in Melbourne, likely to last until the end of March and he has taken the opportunity to attend the March meeting of the VK3 Division and also take part in the hidden by the V.H.F. Group. He is returning to the States by air via Singapore, Rome and other European spots. His business interests which brings him to our fair country are connected with thin plastic containers for the packaging of food stuffs. My suggestion to him that the field of plastic mugs, cans had not yet been exploited, was not received with much enthusiasm.

Mike XZ2OM, in forwarding a batch of cards bemoans the poor response from VK stations and to this end only sends cards to those he receives. He has published a list of the VKs, VK4, VK5, VK6, and VK9. His full QTH is F/Lt. Aung Myint, XZ2OM, Burma Air Force, Yangon, Burma. Mike is a very friendly fellow, always willing to oblige any VK station needing an XZ contact.

Prof. Juan de Sacram, of Madrid, Spain, has published charts and a booklet containing a new technique in predicting optimum traffic frequencies for distances from 100 to 1300 kilometres in all the world. Prices are: (1) 5 nograms (model for teaching) and booklet, £1/10/- Sterling; (2) 5 nograms in plastic and booklet, £1/10/- Sterling. He may be contacted at El Encinar 10, Madrid, or through the U.R.E. Apartado 320, Madrid, Spain.

The QSL card for the late Domenico Marino, IT7AI, Box 300, Palermo, Sicily, His call sign is often heard on 8 M. c.w.

In recent QSL to Eric 8ER512, Kurt, of HBIMX, Stuttgart, Germany, has the rare country of Liechtenstein every week-end on the 80/40/20/15 mhz bands on both c.w. and phone and on 100 and 1500 VK and ZL stations. He QSLs 100 per cent.

Roy Arnel, ex-VK1RR, Macquarie Island, who is now in the service of the Admiralty, Qld., arrived in 1959. His stay was very short, and the Norwegian tanker on which he is aboard then left for Panama and Europe. In brief, he was a very good fellow. Roy said he hopes to get his discharge from the tanker later this year, after which he intends to return to VK with his eye on another visit to the Antarctic. He further stated that he did not send out any QSL cards for VK1RR, but will do so after his return to this country.

NEW SOUTH WALES

The February meeting of the Wireless Institute (N.S.W. Division) was held at Science House, Gloucester Street, Sydney, on 25th February 1960. The meeting was presided over by the President, Mr. J. J. Jones, who took the chair a little late, owing to the Emergency which had arisen that day, and apologized for the delay.

A visitor, Mr. J. J. Jones, was welcomed by the meeting prior to the minutes being read by the Secretary, Harry ZACH. Eleven new members were present.

The cancellation of the Plenary, arranged for the following Sunday at Sutherland was announced, the weather on the Flood Emergency being the contributing factors.

It is hoped that a Film Night will be arranged in the immediate future, and the idea of a meeting at which this will be held, is given over VK3WJ. Ladies will be welcome.

An Emergency Exercise was discussed and arranged to be held on 10th March. It will be used to form a link with the assistance of the Bushwalkers' Club of N.S.W., in an emergency, and also to deal with the Flood Emergency. The whole scheme was outlined to the meeting and it was arranged to take place on 13th March, 1960.

An interesting lecture was given by Barry Goodman, VK2ZAG, on V.H.F. Antenna Theory, Design and Practice. Barry presented his lecture in a most interesting manner and illustrated it with charts which made his points clear to all General antenna theory, matching and transmission line work, dealing with the course of the lecture. A vote of thanks was tendered by Frank ZQL to Barry for his effort.

The President then outlined the procedure to be adopted by participating stations under Emergency conditions and stressed the importance of operating under VK3WJ and getting in touch with the local Police to offer services, the question of gear to be designed was discussed, and the desirability of some standardization of gear.

The Class Secretary announced that a new A.S.T. syllabus will be issued on 25/4/60. This includes radio theory, covering all aspects of radio, and competent instruction in Morse code, operating, and getting in touch with the local Police to offer services, the question of gear to be designed was discussed, and the desirability of some standardization of gear.

The next meeting of the Division will be held on 25/4/60 at Science House, Gloucester St., Sydney. All are welcome.

SHORT NOTES

Hunter Branch.—Eighteen members and visitors attended the February meeting of the Hunter Branch at the Tighes Hill Technical College on 11th February. Two films were shown, entitled "Scientific in the Antarctic" and Turbo Jet Propulsion, these in turn being followed by a lecture given by Max Soehle, JOT, who used a Patten generator to produce and illustrate the checking of linearity in t.v. receiver. Preparations are being made by some of the Hunter Branch members to go to the Convention at Sydney on 25/4/60, and to attend being Harold 2AHA, Bill 2XT, Les 2AOK, and Bob Bailey.

The National Flood Emergency which is still operating as this is written.

The meeting of the Hunter Branch, VK3AWX, is to be held each Monday at 8 p.m. on approx 7099 KHz. with full information regarding all Branch activities. The April meeting will be held on 25/4/60 at 8 p.m. at the Tighes Hill Technical College.

Zone Officer Noel 2AHH, of Kempsey, reports that there is little to report from the North Coast area this month, most of the operations being busy in this time. Definite bookings at Urunga have been made by VK4 DU, ALQ and others. At the time of writing, it is hoped that any of you who intend to attend Urunga should contact the organisers at once and reserve a place. The National Flood Emergency week-end, 2AARN has been on holidays at Port Macquarie recently, 2XZK soon to travel to Sydney for a semi, had SAWY from Orange on holidays at Inverell.

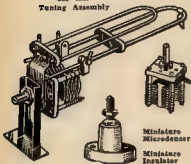
The N.S.W. Amateur Radio Co-operative is off to a good start and subscriptions are coming in. The first month's dues are being received. It is hoped that more of our members will send in their money to enable the board to commence on the 1st of March. The N.S.W. Amateur Radio Co-operative in the near future. All communications should be addressed to the Secretary, N.S.W. Amateur Radio Co-operative, Box 1194, Sydney.

Busiest man in the Western Suburbs, indeed, probably in any Sydney suburb, is Chas 2AWQ of Russell Lane. Surprising how few know there is such a busy fellow in Sydney. Chas is at Rod Point area. Chas is very active on 40 and can be heard working well after midnight. His equipment is according to his own ideas, a small, tidy, and well-equipped as anywhere. It is built inside the garage at the rear end of his property, and is well hidden behind the walls. Here Chas often does the Sunday morning broadcast for VK1WJ, keeps informed on 2 mhz activities, 30, 40 and 80 mhz. He has a very good knowledge of his own field. His other activities are W.I.A. Councilor, Australasian Disasters Committee, Secretary of the N.S.W. Amateur Radio Co-operative, and the Editor of the compiling and printing of the "Bulletin", and the compiling of the W.I.A. broadcast. Yes, a very keen and busy fellow. He is the first to admit he is not the only busy bee and acknowledge the willing co-operation of the keen young fellows in the N.S.W. Amateur Radio Co-operative. President Jim Corbin, on your efforts to insure new blood in W.I.A. affairs. Congrats also to Les Page 2LP, who has been very active in the N.S.W. Amateur Radio Co-operative. Les expects to be on 3 mhz from his location at St. Ives before very long. Congratulations to the N.S.W. Amateur Radio Co-operative on gaining the A.O.C.P. after only six months tuition at the W.I.A. Class and valuable help on c.w. by Andy 2AK. Ken was working on 40 mhz with a W.I.A. Class temporary A2S to. His big rig is well on the way. Bob 2AWQ, back from holidays, was soon busy on 40 mhz. He has a very good knowledge of his battery operated g.d.o. to a.c. did a little more work on g.d.o. to c.w. converter. Inductive and transmission line work, dealing with the course of the lecture. A vote of thanks was tendered by Frank ZQL to Barry for his effort.

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etc.

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SCREEN TAPS: 10% of Plate Z.
P.R.: Plus or minus 1 db 10-30,000
c.p.s.
Leakage Inductance:
1/2P/1/2F: 10 mH. maximum.
Prim./Sec.: 50 mH. maximum.

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For VALVES:

61A, 6X5,
KT66, etc.

See "Radio and Hobbies" of Feb-
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Amplifier.

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Primary: 6,000 ohms.
SCREEN TAPS: 10% of Plate Z.
P.R.: Plus or minus 1 db 10-30,000
c.p.s.
Leakage Inductance:
1/2P/1/2F: 10 mH. maximum.
Prim./Sec.: 10 mH. maximum.

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or 15 ohms.

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CORRESPONDENCE

QSL CARDS WANTED

Baling Estate, Kuala Keiti,
Kedah, Malaya.

Editor "A.R.," Dear Sir,

I should like to make an appeal through your correspondence column to ask the VK Amateurs to try and improve the QSL situation. In countries such as Malaya, there is a large turn-over of Amateur population, for example few Forces Amateurs are active here for more than two years. As a result, Amateurs for V8A find it very difficult to trace these Amateurs after they have left.

Recently I received a batch of about 50 cards from the VK QSL Bureau in Brisbane. Of these cards, which took only five weeks to arrive by sea mail from Australia, a few represented contacts made in 1954, the majority in 1953 and some in 1952. Among them were cards from a a.w.l. listener in Brisbane itself giving signal reports on contacts made in 1953 and 1952. He must be a very optimistic chap if he expects verifications after all this time.

In the last six months I have received cards from the QSL Bureau in Brisbane from two sections, where are the rest? Surely they must have cards for V8A.

Surface mail costs are not expensive and the small Society manages to clear its outgoing QSL Bureau every month. I am sure the VKs should be able to do it at least every three months, even if they only say 10 cards, or is this asking too much?

How about it chaps, remember the fellows in the QRP section appreciate the QSL card and get disheartened if they take a year to arrive or does not come at all.

I send out my own QSLs for the VKs each month, and after two years, the results are as follows:

Section	Cards Sent	Cards Received
VK1	100	11
VK2	100	11
VK3	100	11
VK4	100	11
VK5	100	11
VK6	100	11
VK7	100	11
VK8	100	11
VK9	100	11
VK10	100	11
VK11	100	11
VK12	100	11
VK13	100	11
VK14	100	11
VK15	100	11
VK16	100	11
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VK91	100	11
VK92	100	11
VK93	100	11
VK94	100	11
VK95	100	11
VK96	100	11
VK97	100	11
VK98	100	11
VK99	100	11
VK100	100	11

A pity so few received. I would be very grateful for some VK1 and VK9 cards for DX C.C.
— J. C. FERHOUSE, V8IDQ.

HAMADS

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Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

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ing by the rude remarks passed by the c.w. boys after their win, it is possible that even ruder remarks might be passed should we protest, and with this in view, the phone boys can only say, "wait until we meet again next year."

As has been said, the SRSG, Andy SEA, Martin, Forgie, Beasney, Turnbull, McCauley, Winkler, and McCauley (Don) had the distinction of paying the visiting team and our congratulations go out to them.

Well, it has come around again, next month sees me on my well earned holidays. This means that Doc SMD will get his annual chance to have a day off, and I shall be able to relax and also have the pleasure of writing the weekly notes in the daily paper under the heading of "Pro SMD." Did you ever read such a column? Pro SMD! That's the one thing that grips him, to write to sign such a pen-name, especially for the whole State to read. Anyway, in this State, as you can see, it's a lie, it's a fabrication, it's a distortion of truth.

WESTERN AUSTRALIA

At the February meeting of the Division, these present were entertained with talks by Doug Smith, recent winner of the 3.5 and 7 Mc. Eastern States, and Wally Coxon, GAG, on "Technical Aspects of the Flying Doctor Service." The latter was a very interesting talk while "on the track"—some amusing, some otherwise, and held the floor for a very interesting half an hour. His comments on the public's attitude towards the Flying Doctor aroused considerable enthusiasm amongst the gang. Wally Coxon, as engineer for the Flying Doctor Service in this State, was a real in touch with his subject, and gave details of some of the modern technical advances being made by the service in this State.

I don't think it needs to be out of place at this stage to comment on the fine job done by members of the VK3 Division in the recent New South Wales flood disaster. Local press comments were very favourable and we had only to listen on the various channels in the 3.5 and 7 Mc. bands to realise the good work that was being done. Congratulations!

Once again it has been found necessary to re-open the 3.5 Mc. channel for the W.I.A. news broadcasts of a Sunday morning. If you have not been receiving the 7108 Kc. channel very regularly, you will find that the results may be a little better.

Another point concerning the broadcasts is the unwelcome news of the temporary retirement from the task of 6GH. George has other commitments which will keep him more than occupied during the next twelve months, but he hopes to be able to resume duty as broadcast operator at the end of this period. At the moment it is not clear who will fill the gap.

6BS has been heard again on 3.5 Mc., but a very elusive character is Basil these days. 6ZZ, after a burst on 7 Mc., turned up on 30 mc to give the beam a dusting. 6LM not so busy with house building as to find time for an occasional contact. 6EC also bobbed up on 30 mc with a high powered burst. He and 6GJ got stuck into a discussion about sine, pulses, square waves, linearity, e.h.t. and similar t.v. type subjects. 6GJ seemed to be a little more marked that the skip on 7 Mc. was once again too long for good city/country contact.

6WL and 6WZ heard in contact on 7 Mc. recently. Harry and Margaret have a new car, as was mentioned in the last column, but better than ever! 6KOs' call sign heard being mentioned by the DX on 14 Mc., so Kevin must be getting close to preparing for his first trip to DX in Kalgoorlie. No need to hear Bill himself to know he is active!

TASMANIA

The March general meeting attracted quite a good gathering to the club rooms, about 30 members being present. Business for the evening consisted of last minute arrangement for the Annual Meeting and Dinner, and the collecting of nominations for the Council. Several new names appeared on the nomination list and it is hoped that some will be elected. It is always a good idea to keep fresh blood coming into the club, and by the time the next notes appear the new Council will have been elected. Here's wishing them a successful term of office.

It was decided to hold a Picnic and Te Hunt on the Sunday following the Annual Dinner for the entertainment of visitors and others, the hunt to be on foot and within a mile of the picnic barbeque. The picnic will be held at Councillor, TBJ, gave a summary of the results of the recent enquiry into the method of scoring

ing in the R.D. Contest, and also formally moved the motion to amend the Constitution to make holders of the Limited A.O.C.P. eligible for full membership. At the conclusion of the business, a lecture on "Feedback in Amplifiers" was given by Mr. Bruce Kline, Engineering Chief of THT. Mr. Kline traced the history of feedback (both wanted and unwanted) and gave typical examples with their share of a vote of thanks, proposed by TAJL, was carried with acclamation.

In last month's notes I omitted to include a comment on the excellent assistance given to the visiting team by the THT staff. Mr. Watson on last Regatta day. Barney, always ready to help, provided transport, battery recharging and assistance with their share of the making the whole job so much easier. Barney is also a member of the Lecture Committee which has provided so many good lectures lately. THT shared his long silence recently when he came in on the Sunday 60 mc hook-up. So the new rig must work OK all right, there's been a long silence of silence since, so maybe something blew up.

Jim Millway, of the Central Group at Taraleah, who recently gained the Limited A.O.C.P., is on a visit to VK3 land. Contrasts to you, he is expected that Doug TAD and Ted TEJ will be moving to Hobart to take up residence. Doug was instrumental in designing and building a 30 mc. transmitter for the Tasmanian Fire Brigade recently. Another Doug—70Z—hero of the recent "deep in the car" episode, will be on the way to Hobart to take up his new TML. He is now working on an all-band rig to go with his recently built miniature tx. Associate Vance Lohmann having fun with v.h.f. taxi equipment and suggesting he would like to how to eliminate ignition noise from cars who sit under the rear bumper bar.

As this is the last time that I will be writing these notes, I wish to take the opportunity of thanking all who have shared on bits of news, etc., and to wish the incoming Sub-Editor good hunting.—TLE.

NORTHERN ZONE

For our February meeting a very welcome visitor was Ed Bovis, ex-GIEXD, who has settled in the beautiful Tamare Valley in Australia's premier State, and is available to accept his share of the G land. Hope to hear him with a VK7 call sign Ed. During Feb., Mac 3AKM spent his holidays in Northern Tasmania and managed to spot a few VKs. An overnight visitor to Launceston was DLAYU, Hans Midner, who has been on a wool-buying tour and returning via Tasmania. Hans has a Blonkint into a pair of p.p. 813s on 30, 40 and 20 mc. using a separate Command tx as v.f.o.-exciter on each band. He is on the lookout for VK and 3L contacts.

Of local interest, 7LZ has modified his 2 mc. tx to run 100W, and has a good signal in the area. There has been quite a spate of 3 mc activity with building of "personal portable" 3 mc rx's and highly directional beams to try and track from that master of evasion, TKW. Three times in February Chris conducted hidden tx hunts, which are certainly stimulating local interest in the zone.

NORTH WESTERN ZONE

Recent visitors to the North Western Zone were Harry ZLJAF and Rod ZLAMY who were both highly interested in the zone and were very impressed with what they saw. Another visitor was Keith 3HK who was travelling in a small car with a portable rig on all bands and seemed to be a very experienced operator.

Members of this zone recently made a trip round the Hydro development schemes in the central highlands of Tasmania where a large gathering at the QRP Reception was held. Included were Jim ZLZAM, of Taraleah, Bill Ingh and Associate Wolfgang, of Bronte, Harry TBR, Len TJS, Charlie TCF and Gill, of Queens-Town, Dennis TDR and KVL, of Hobart, and the N.W. party included Syd T5F, Ellis TWA, Roy TBN and Associates K. Kanecook and R. Wilson. The trip was very successful and the ladies and were very much appreciated.

Sam TUV is home from hospital now and thinking of bigger and better ideas for DX. Murray TMR is still on the sick list, but we hope he soon recovers. It is rumoured that our zone's representative at the Regatta, to Hobart for which we are very sorry, but hope he at least got a rig going on 30 mc to get his foot with the Regatta. The Regatta was just completed a new BJK aerial and is in the process of building a new final with an all-band tank. It is rumoured that 750 will be on the air on the 14th of March, and also that 75F has gone mad on racing cars; watch out for your neck Syde.

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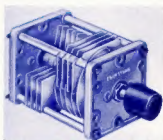
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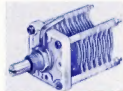
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